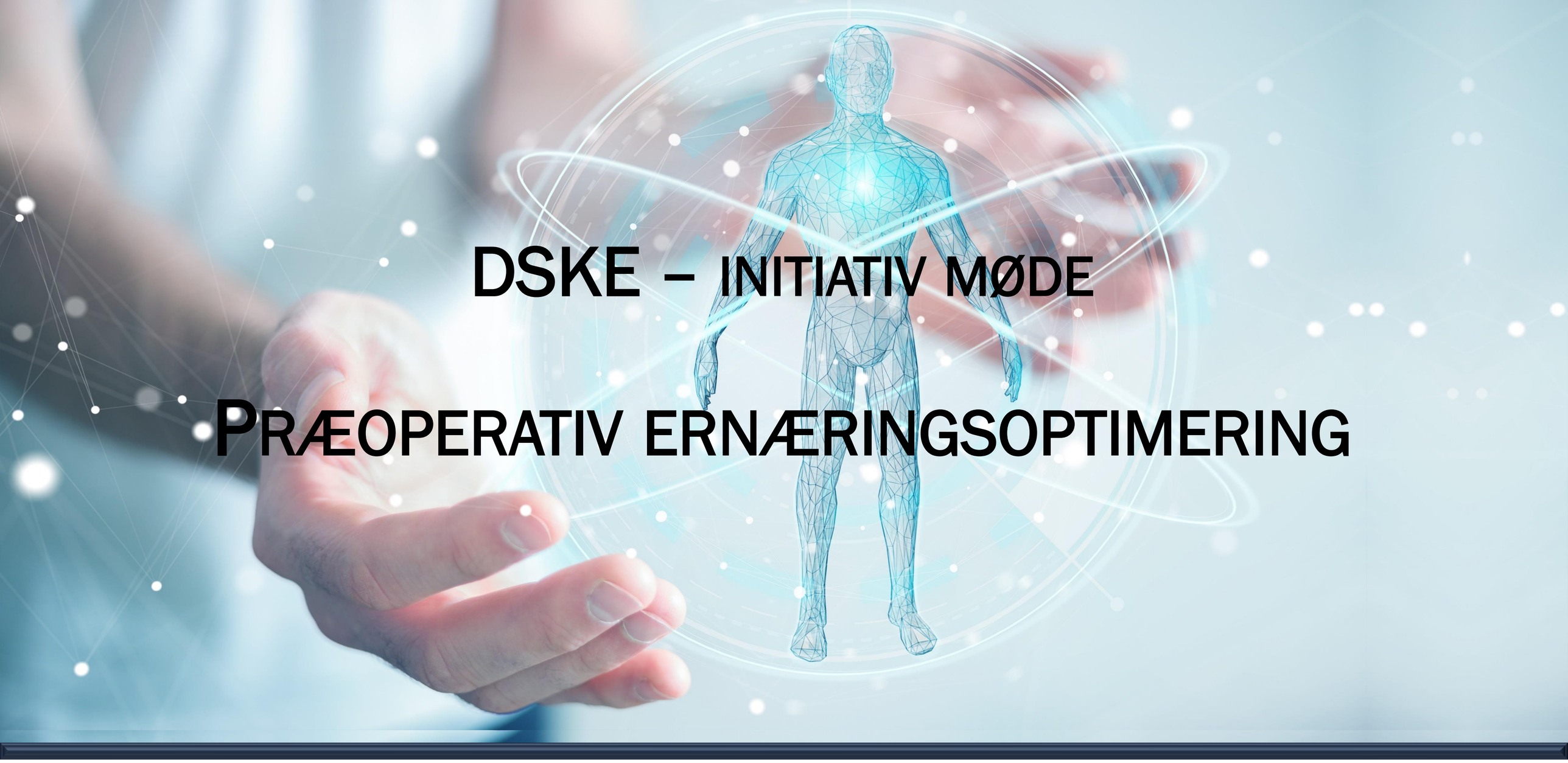

DSKE – INITIATIV MØDE

PRÆOPERATIV ERNÆRINGSOPTIMERING

Rasmus Dahlin Bojesen, Læge , Ph.d.
Center for Surgical Science
Kirurgisk Afdeling,
Sjællands Universitets Hospital

CENTER FOR SURGICAL SCIENCE

REGION ZEALAND
ZEALAND UNIVERSITY HOSPITAL

Disclaimer

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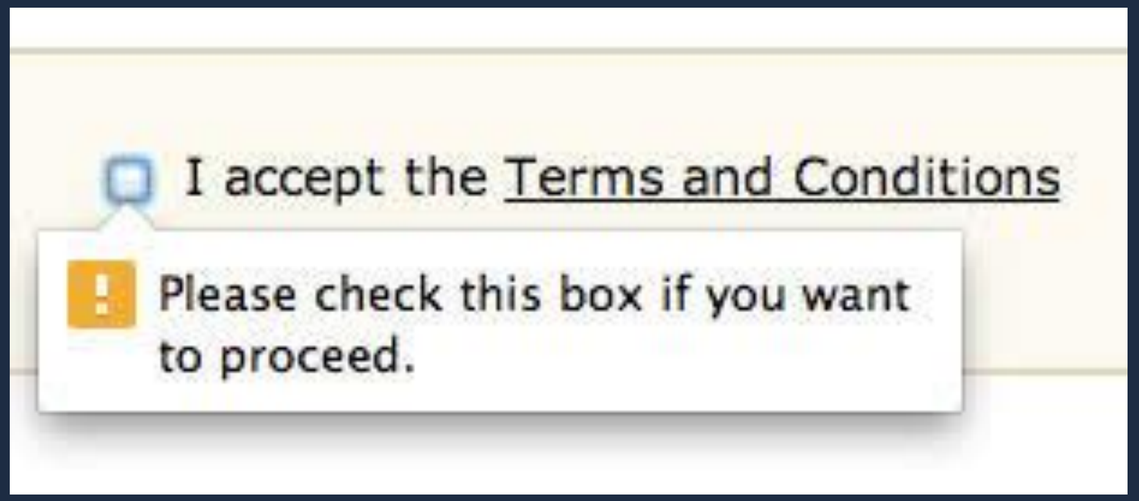
I Det er et kæmpe emne!! – 30 minutter er ikke lang tid

II Jeg ved mest om colorectal cancer

III Jeg kommer ikke til at fortælle jer noget som i ikke allerede ved….



Jeg er frelst!! – Har dog ingen aktier i hverken Nestle eller Arla

SPØRGSMÅL 1! – QUICK POLL

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Hvordan håndteres præoperativ fejlernæring hos elektive patienter på din afdeling?

A: Det er sjældent at jeg ser en fejlernæret patient præoperativt

B: øhh.. Er det ikke noget med s-albumin

C: Vi screener systematisk og har klare retningslinjer for behandlingens indhold og varighed

D: Jeg arbejder ikke med kirurgiske patienter…tror jeg nok

Kirurgisk stress respons – Det kontrollerede traume

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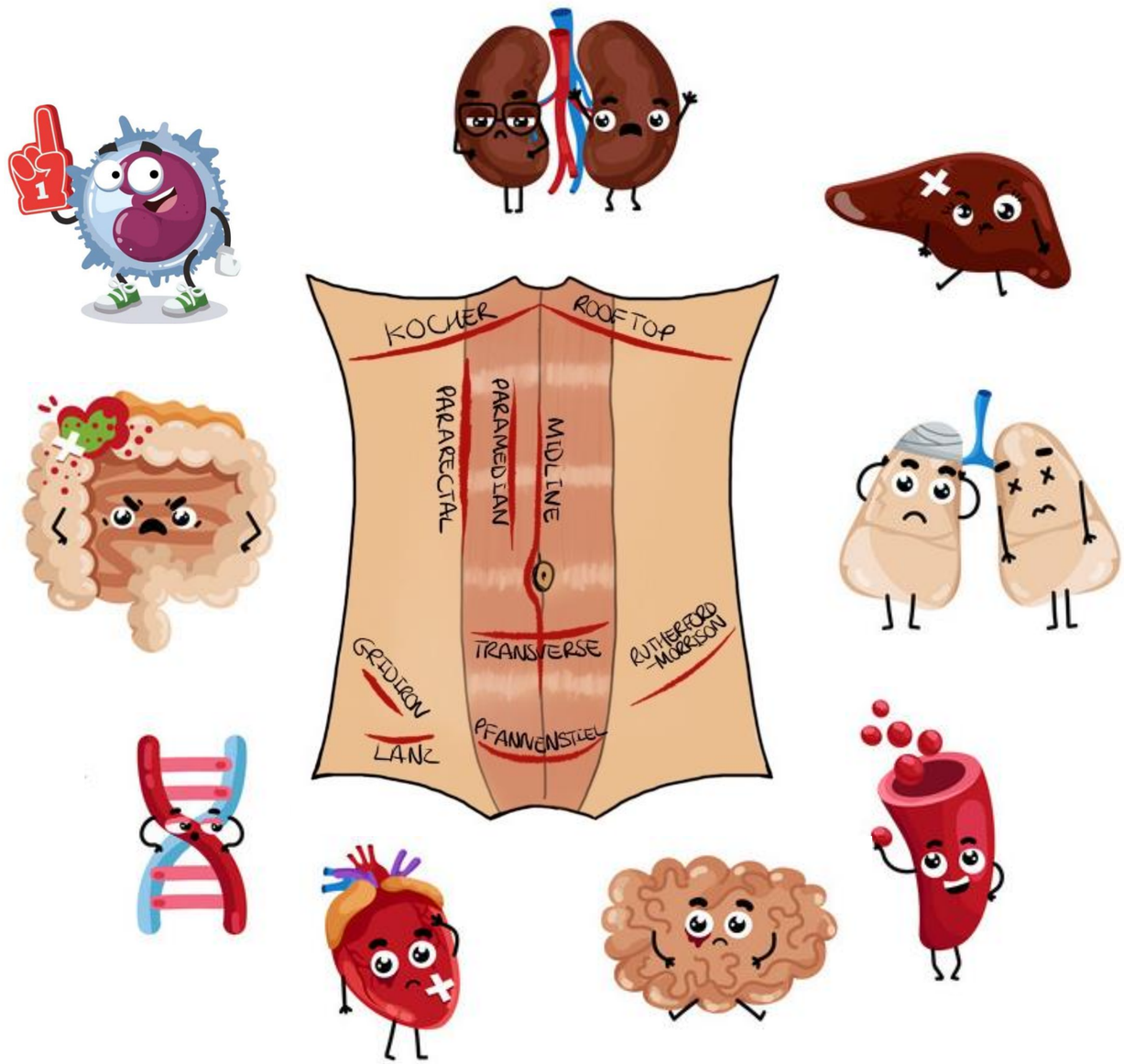

Kirurgisk stress respons – Det kontrollerede traume

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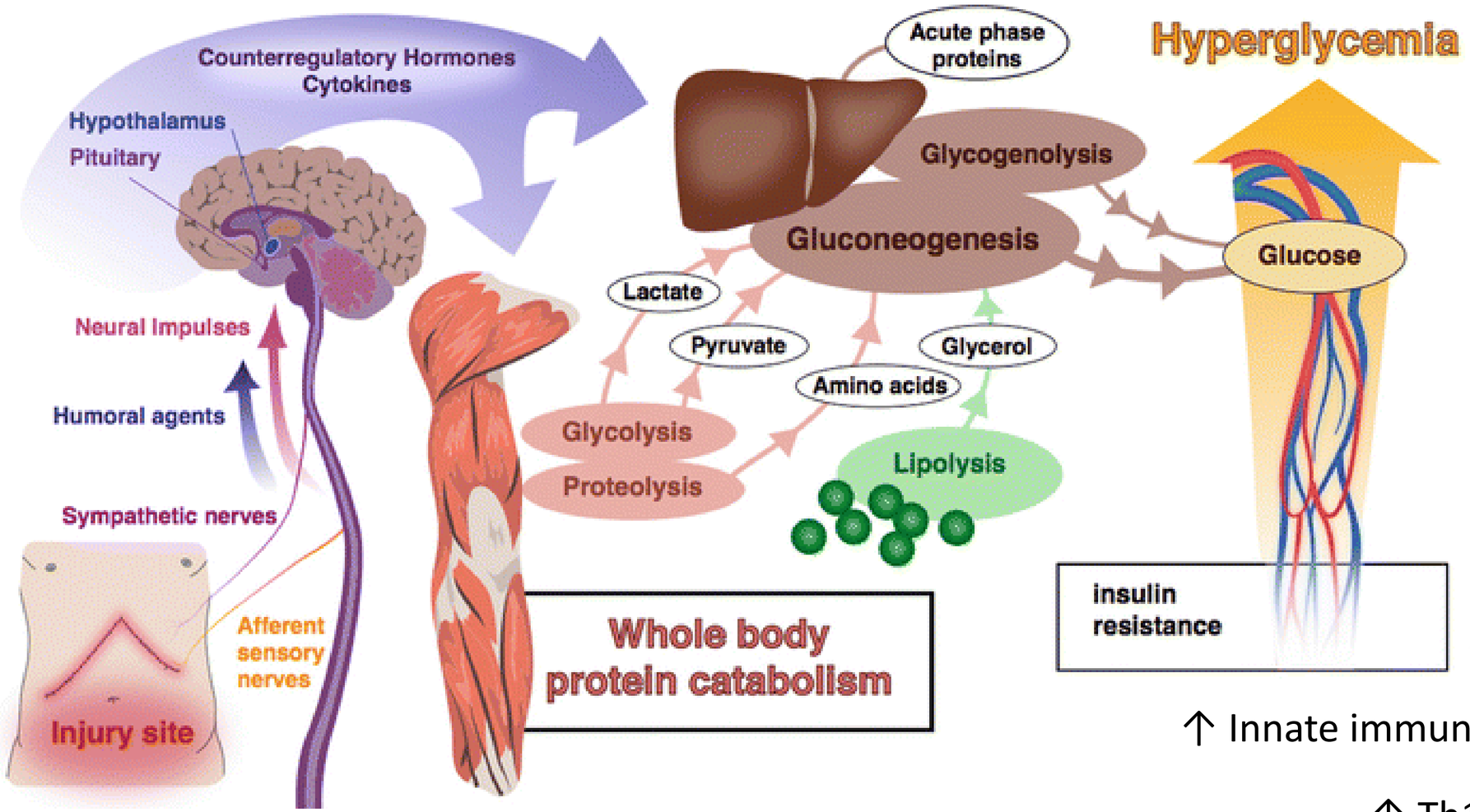


Immunsuppresion

↑Inflammation

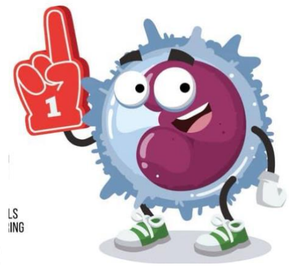
↑ IL-1, IL-6

↑ C3 Complement

↑ TNF-α

↑ Innate immunsystem

↑ Th1 response



Kirurgisk stress respons – Det kontrollerede traume

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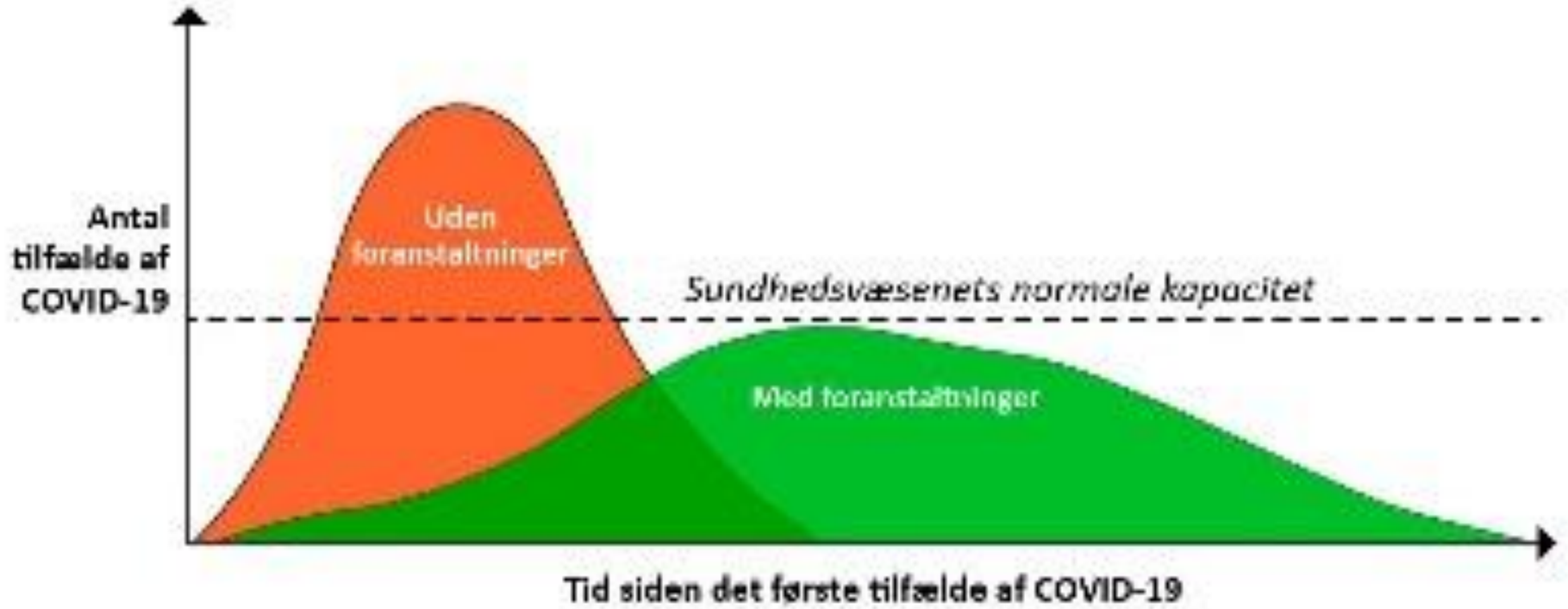

Hvad er fejlernæring hos den kirurgisk patient?

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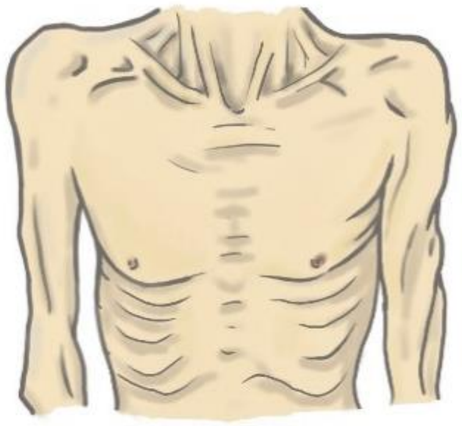
Sarcopeni

Kakeksi



Frailty

Underernæring

Fedme / overernæring

Myosteatose

Wasting

Micronutrient deficient

'*a nutritional state in which nutrient intake does not match nutrient needs – due to underlying disease(s), the surgical stress response, chronic or acute inflammation, intestinal malabsorption (e.g. diarrhoea) and/or patient-related factors (e.g. socio-economic status) – leading to losses in lean tissue and diminished function*'.

HVAD ER FEJLERNÆRING HOS DEN KIRURGISK PATIENT?

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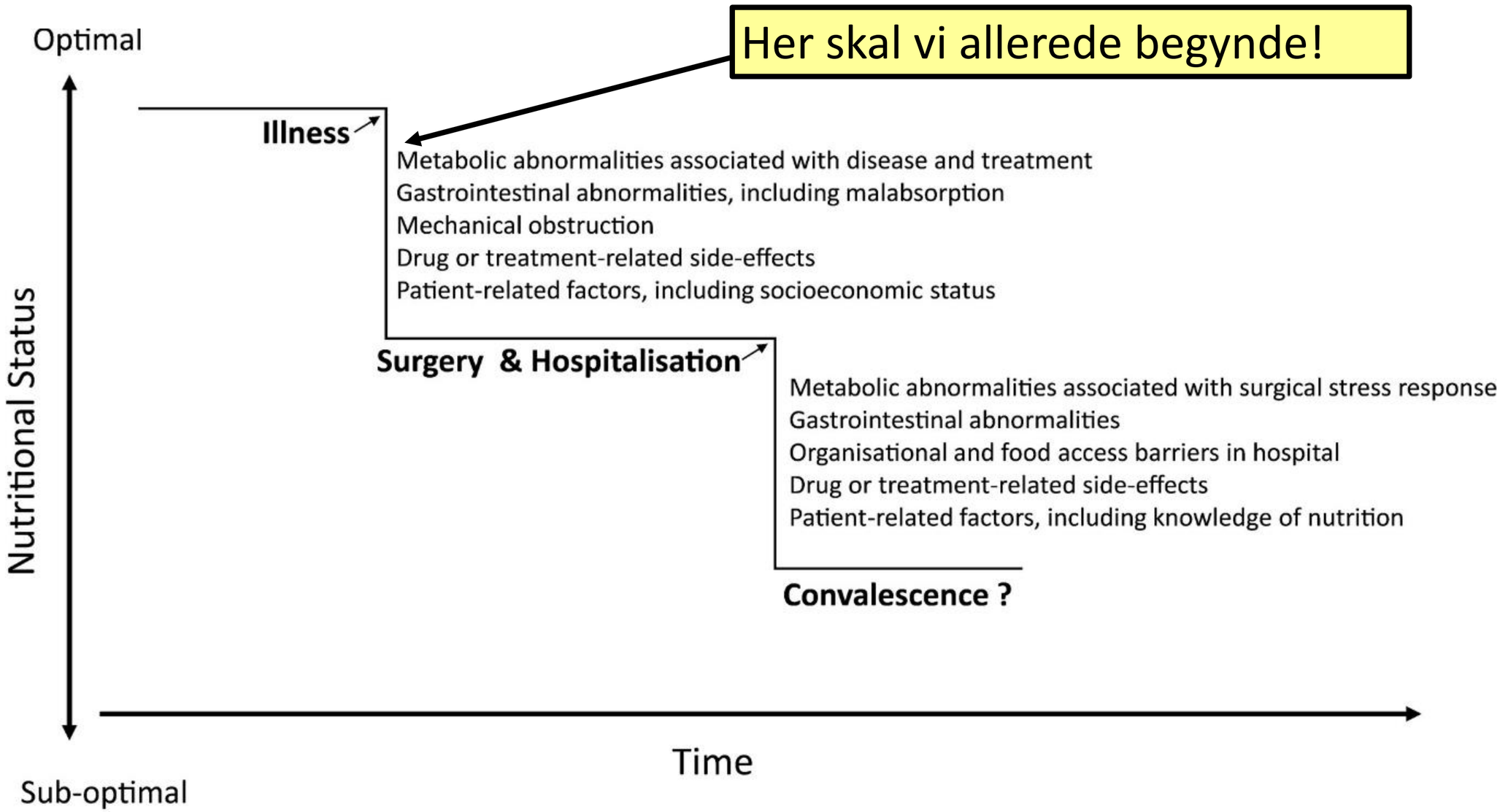

Gillis et al. Anaestehiisia 2019 : https://doi.org/10.1111/anae.14506

POST OPERATIV ERNÆRING

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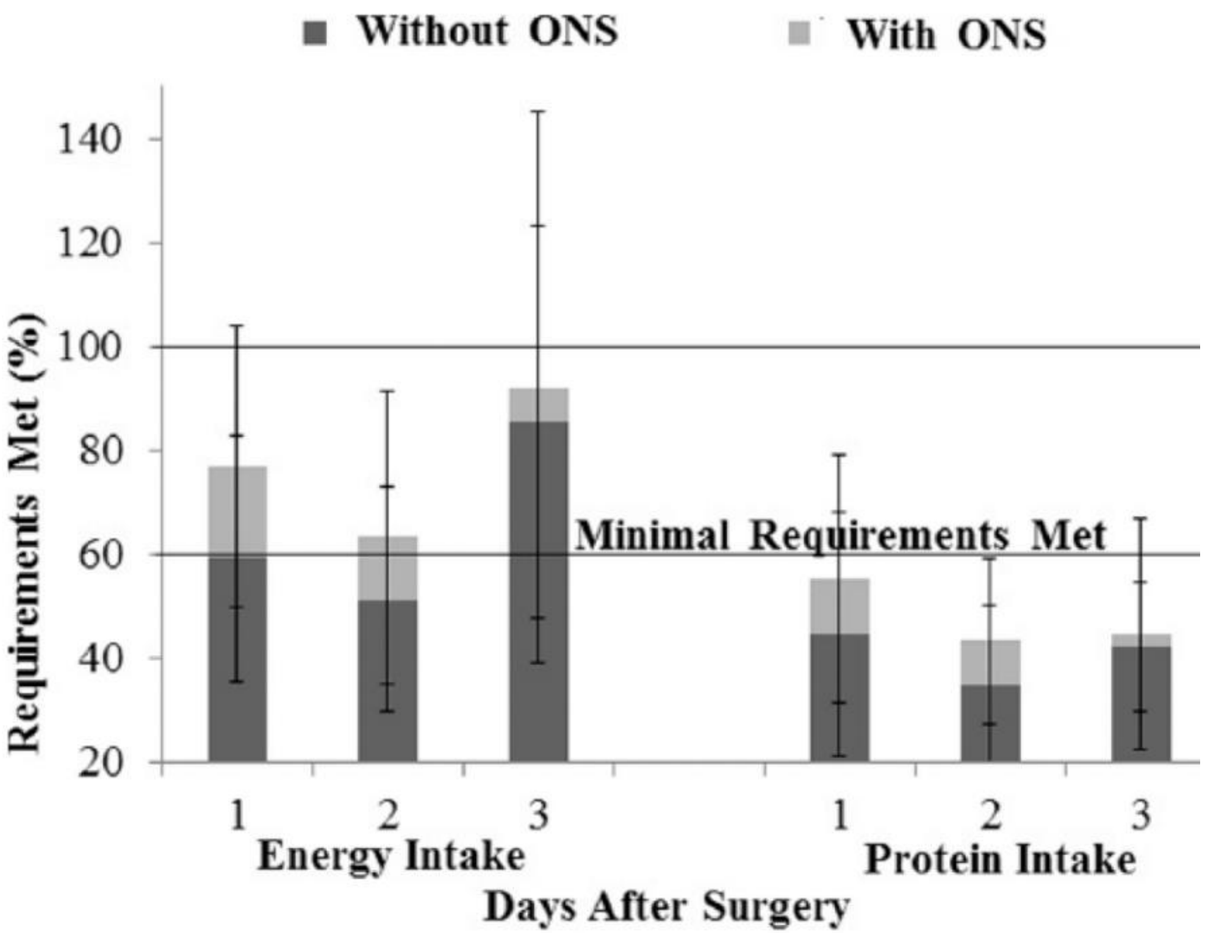

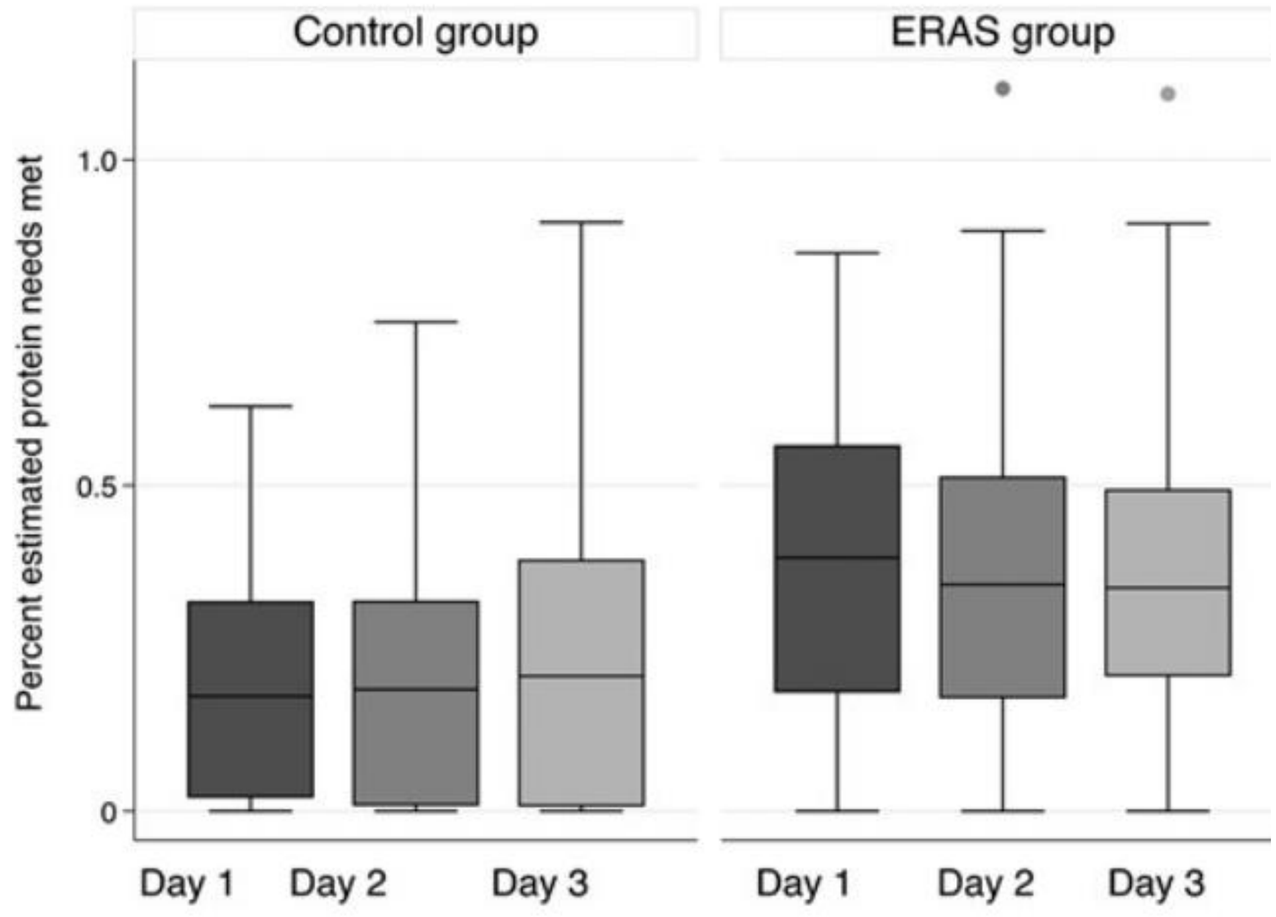

Gillis et al. Nutrition in clinical practice 2014 https://doi.org/10.1177/0884533614562840

Yeung et al. American Journal of clinical nutrition 2017 https://doi.org/10.3945/ajcn.116.148619

Prævalens af fejlernæring ved cancer

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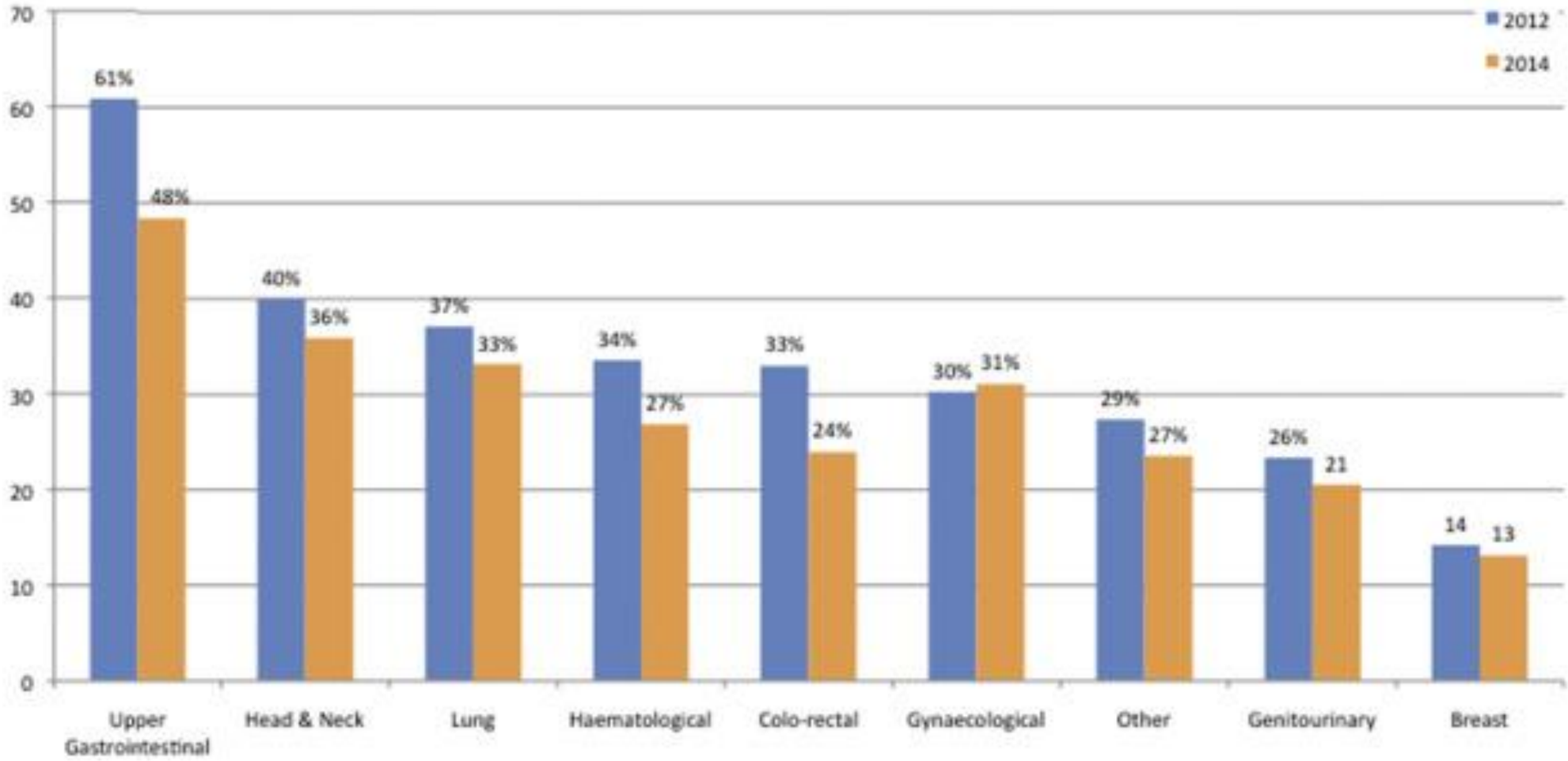

Målt ved PG-SGA B eller C

Marshall et al. Clinical Nutrition 2019 DOI:https://doi.org/10.1016/j.clnu.2018.04.007

FEJLERNÆRINGS INDFLYDELSE PÅ KOMPLIKATIONER

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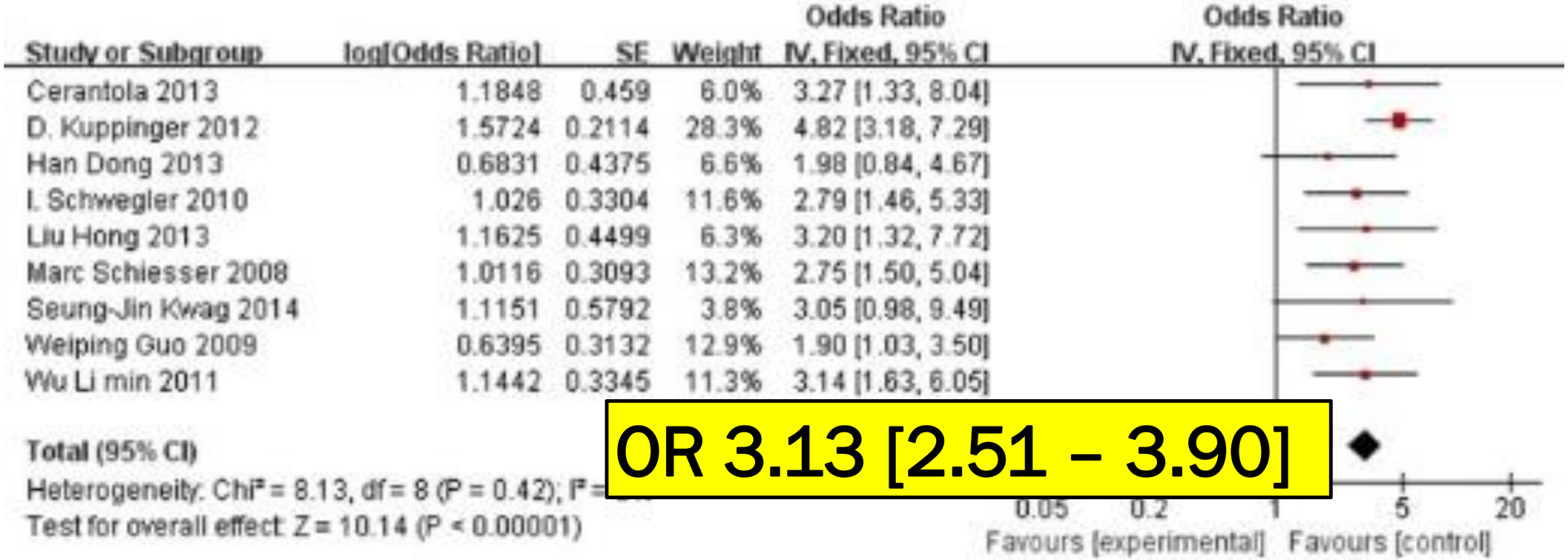
NRS 2002 - screening



OR 3.13 [2.51 – 3.90]

n = 3527

Su et al. 2015 • DOI: 10.1371/journal.pone.0132857

SPØRGSMÅL 2!

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Hvor meget reducerer perioperativ ernærings interventioner risiko'en for infektiøse komplikationer hos fejlernærede patienter?

A: 20 % relativ risiko reduktion

B: 40 % relativ risiko reduktion

C: Ingen effekt

D: Der er ikke nok studier til at konkludere på dette område

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DET RIGTIGE SVAR ER!

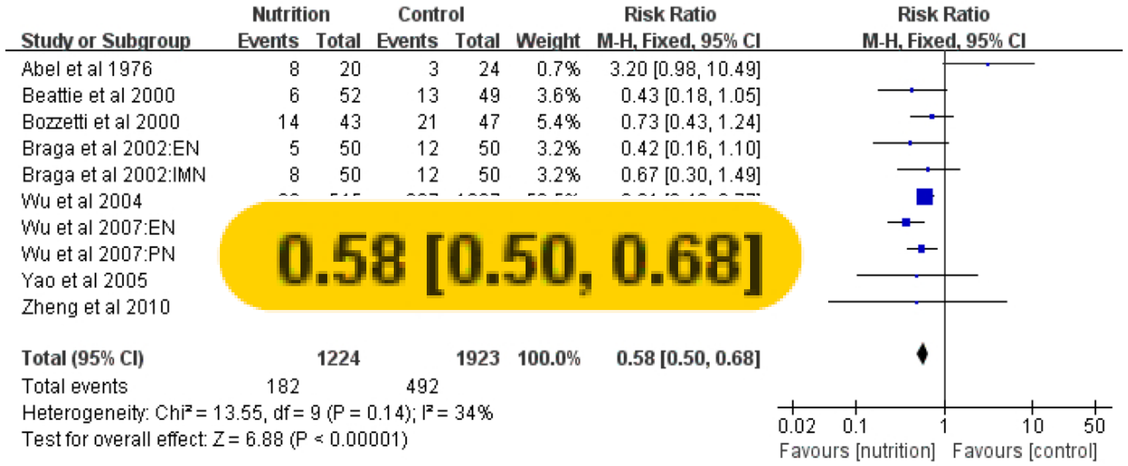

Figure 2. Forest plot of infectious complications between nutritional support and control groups. fixed-effects model. M-H: Mantel-Haenszel test.

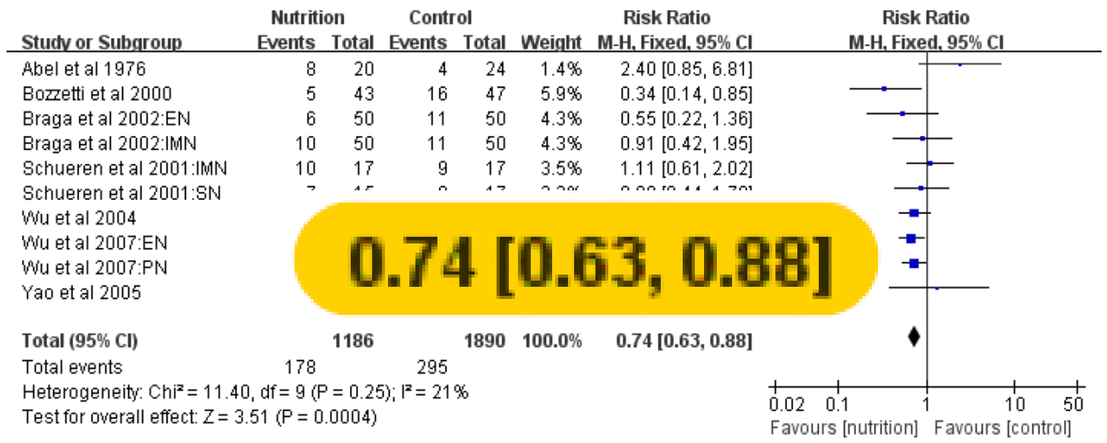

Figure 4. Forest plot of non-infectious complications between nutritional support and control groups. fixed-effects model. M-H: Mantel-Haenszel test.

Infektiøse komplikationer

Non infektiøse komplikationer

Meta analyse 3831 patienter i RCT´ér

B: 40 % relativ risiko reduktion

Zhong et al. Asia Pac J Clin Nutr 2015;24(3):367-378

Hvordan skal vi så behandle præoperativt?

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I Heterogenicitet i interventioner

II Heterogenicitet i indikationer

III Heterogenicitet i populationer

IV Heterogenicitet i klinisk setup – e.g. ERAS, MIS, tidlig ernæring

D: Der er ikke nok studier til at konkludere på dette område

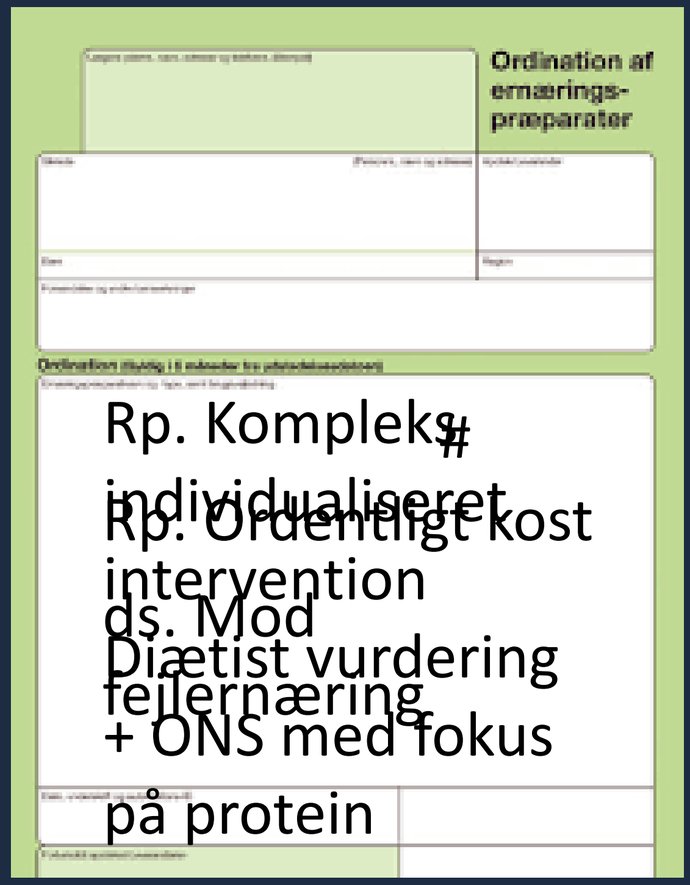
HVORDAN SKAL VI SÅ BEHANDLE PRÆOPERATIVT?

- ONS alene reducerer ikke komplikationer
  (Desværre)

- Diætist intervention reducerer komplikationer

- Kombination af ONS + diætist ser ud til at have den største effekt

- Fokus på protein



Bruns et al. Surg infect 2018; 19(1):10

Gilis C et al. Gastroenterology 2018: 155(2):391-410

Burden et al. J Cachexia Sarcopenia Muscle. 2017 Jun; 8(3): 437–446

Protein – Det nye sort

- ‘Protein’ mangel er stærkt associeret med postoperative komplikationer
- Kirurgi øger og ‘skævvrider’ primært protein kabolismen
- Anbefales: 1.2-2.0 g/kg/dag protein
- Over ½ af alle ældre indtager ≤1 g/kg/dag

Phillips SM et al. *Applied Physiology, Nutrition and Metabolism* 2016; **41**: 565–72
Wischmeyer et al . 2018 Jun;126(6):1883-1895. doi: 10.1213/ANE.0000000000002743.

Immunonutrition – 'New kid in class'

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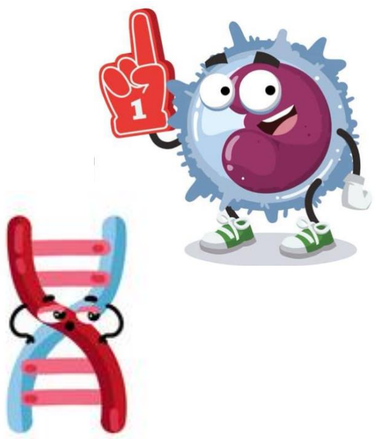

Kirurgisk stress response		Effekt
Arginine	↓ Endogen syntese	↑ T-celle modning og funktion ↑ Bindevævs syntese
Glutamine	↓ Syntese fra skeletmuskulatur ↓ Plasmakoncentration	↑Celle medierede immunfunktion (T-celler)
Omega-3 Fedtsyrer	Erstatter n-6 akadinonsyre i cellemebraner	↓ Eicosanoider ≈ antiinflammatorisk
Nucleotider	↓ De novo syntese	↑ DNA og RNA ↑Celle medierede immunfunktion (T-celler)

IMMUNONUTRITION

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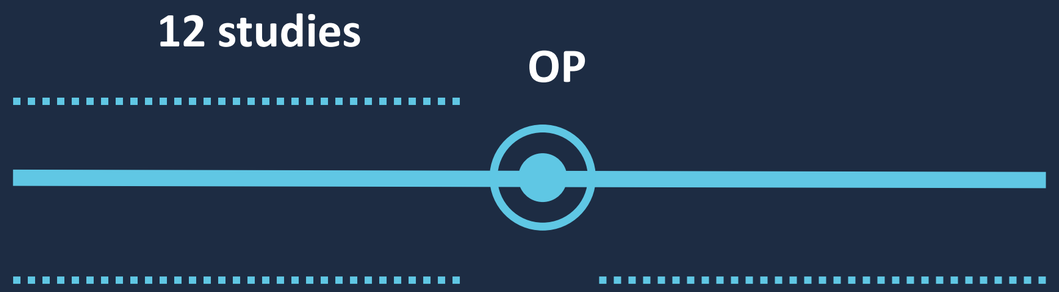

Mean days with oral immunonutrition preoperatively

- ~ 6 day

Dose

- 200-1000 mL/day

Immunonutrients

- Arginine, Glutamine, RNA

Reduced infectious complications: RR 0·58 (95 % CI: 0·48 to 0·70)

Buzquurz et al. BJS 2020 **doi.org/10.1002/bjs5.50314**

Tid – Cancer kirurgi

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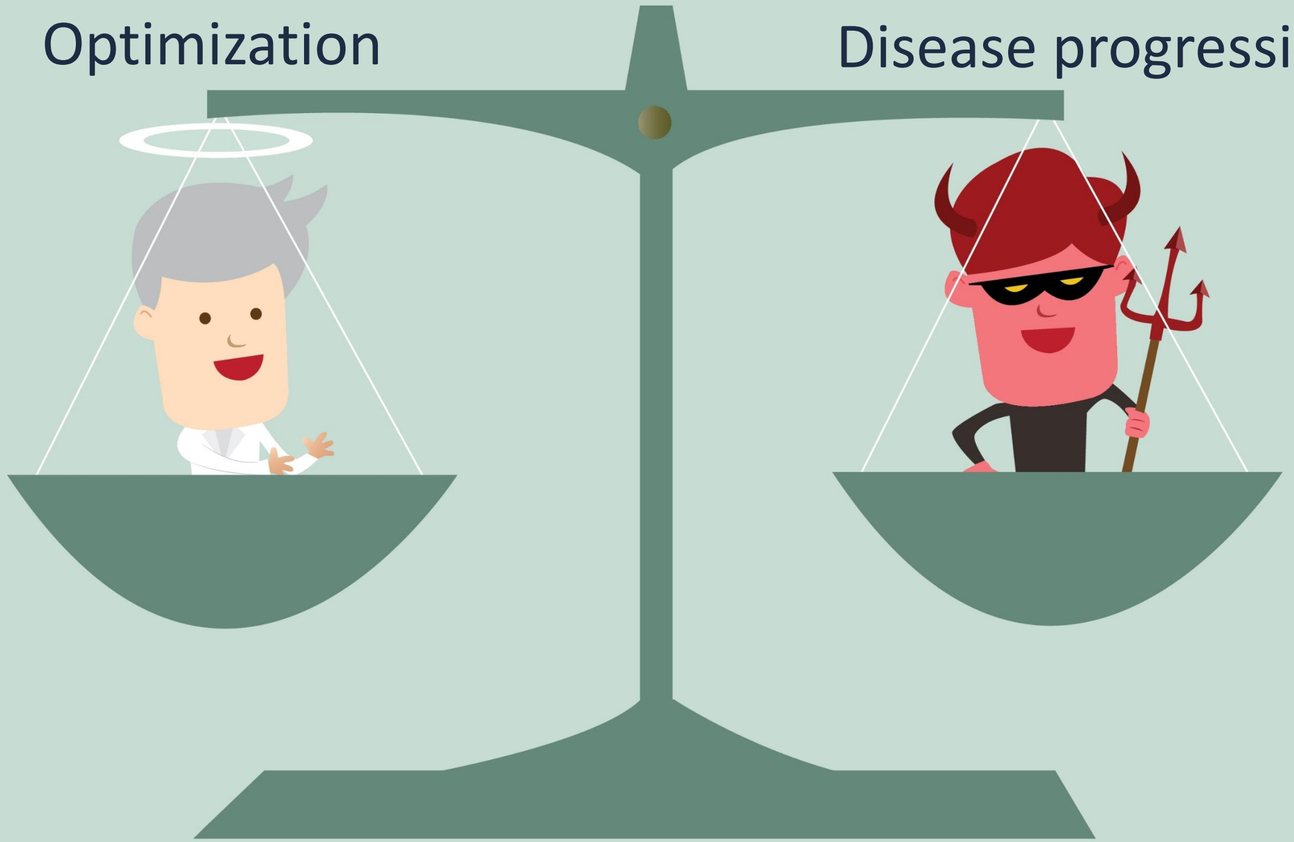

TID

European Journal of Surgical Oncology 44 (2018) 1479–1485

Contents lists available at ScienceDirect

European Journal of Surgical Oncology

journal homepage: www.ejso.com

Review

The effect of time from diagnosis to surgery on oncological outcomes in patients undergoing surgery for colon cancer: A systematic review☆

C. Hangaard Hansen*, M. Gögenur, M. Tvilling Madsen, I. Gögenur

A B S T R A C T

Many countries have implemented cancer pathways with strict time limits dictating the pace of diagnostic testing and treatment. There are concerns that prehabilitation may worsen long-term oncological outcomes if surgery is delayed. We aimed to systematically review the literature investigating the association between increased time between diagnosis of colon cancer and surgical treatment, with special focus on survival outcomes.

Methods: Through a systematic search and analysis of the databases PubMed (1966–2017), EMBASE (1974–2017), CINHAL (1981–2017), and The Cochrane Library performed on June 7th, 2017, the effect of treatment delays on overall survival in colon cancer patients was reviewed. Treatment delay was defined as time from diagnosis to initiation of surgical treatment. All patients included were diagnosed with colon cancer and treated with elective curative surgery without neoadjuvant chemotherapy. This review was prospectively registered on the PROSPERO database of systematic review protocols with registration number CRD42017059774.

Results: Five observational studies including 13,514 patients were included. The treatment delay intervals ranged from 1 to ≥56 days. Four of the five studies found no association between time elapsed from diagnosis to surgery and reduced overall survival. One study found a clinically insignificant association between longer treatment delays and overall survival. Three studies investigated the effect on disease specific survival and found no negative associations.

Conclusion: The available data showed no association between treatment delay and reduced overall survival in colon cancer patients.

Hangaard Hansen et al Eur J Surg Onc 2018

KOMPLIKATIONER

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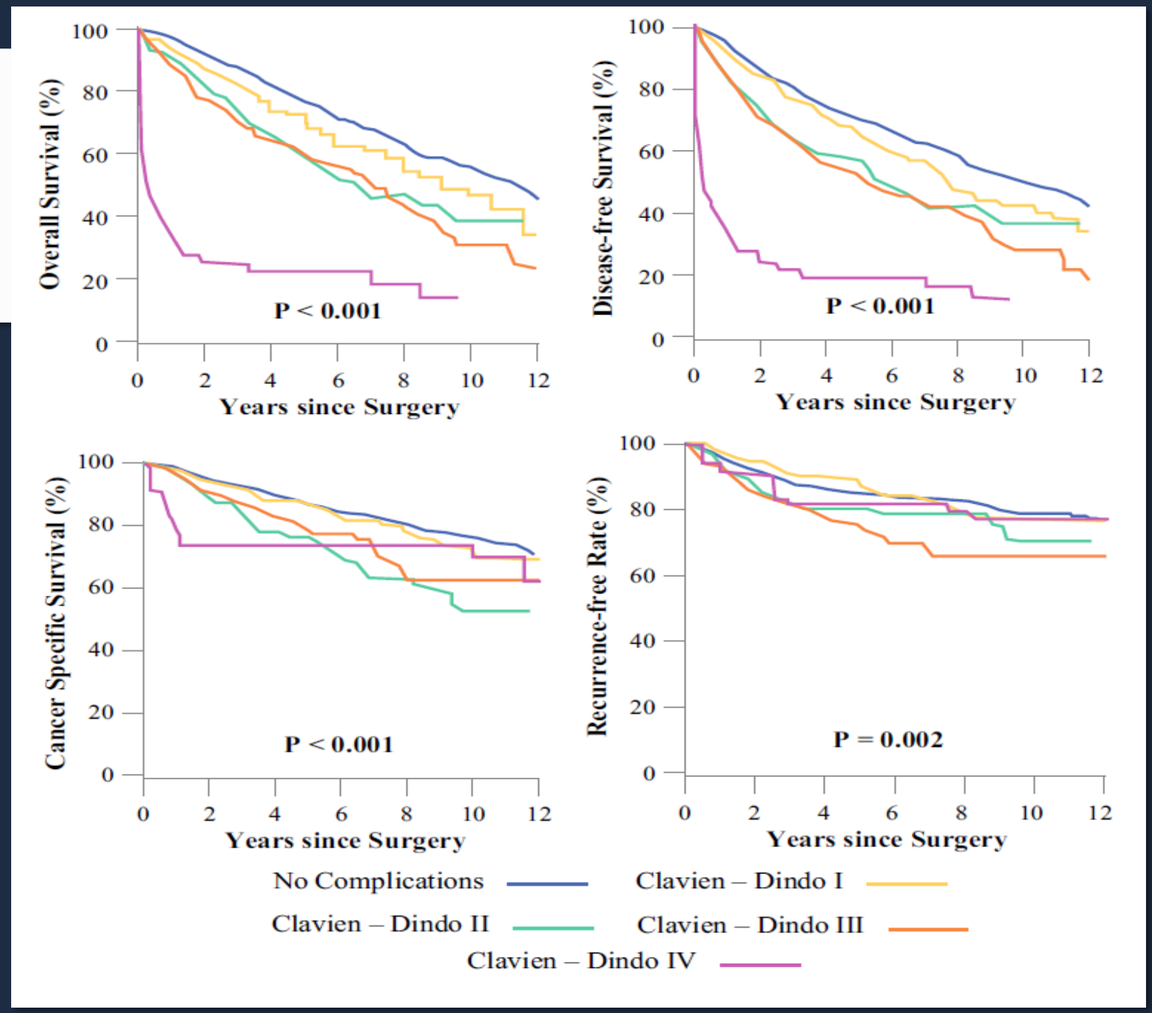
Annals of Surgical Oncology
January 2018, Volume 25, Issue 1, pp 188–196 | Cite as

The Relationship Between Clavien–Dindo Morbidity Classification and Oncologic Outcomes After Colorectal Cancer Resection

- N=2266, whereof 669 (30%) had at least 1 Postoperative Complication
- Mean Follow-Up: 5.3 years
- POC => reduced OS (60% vs 77%), DFS (53% vs 70%), CSS (81% vs 87%) and increased recurrence (19% vs 15%)
- ”Dose-response relationship”



Duraes et al Ann Surg Oncol 2018

HØJ RISIKO PATIENTEN - CRC

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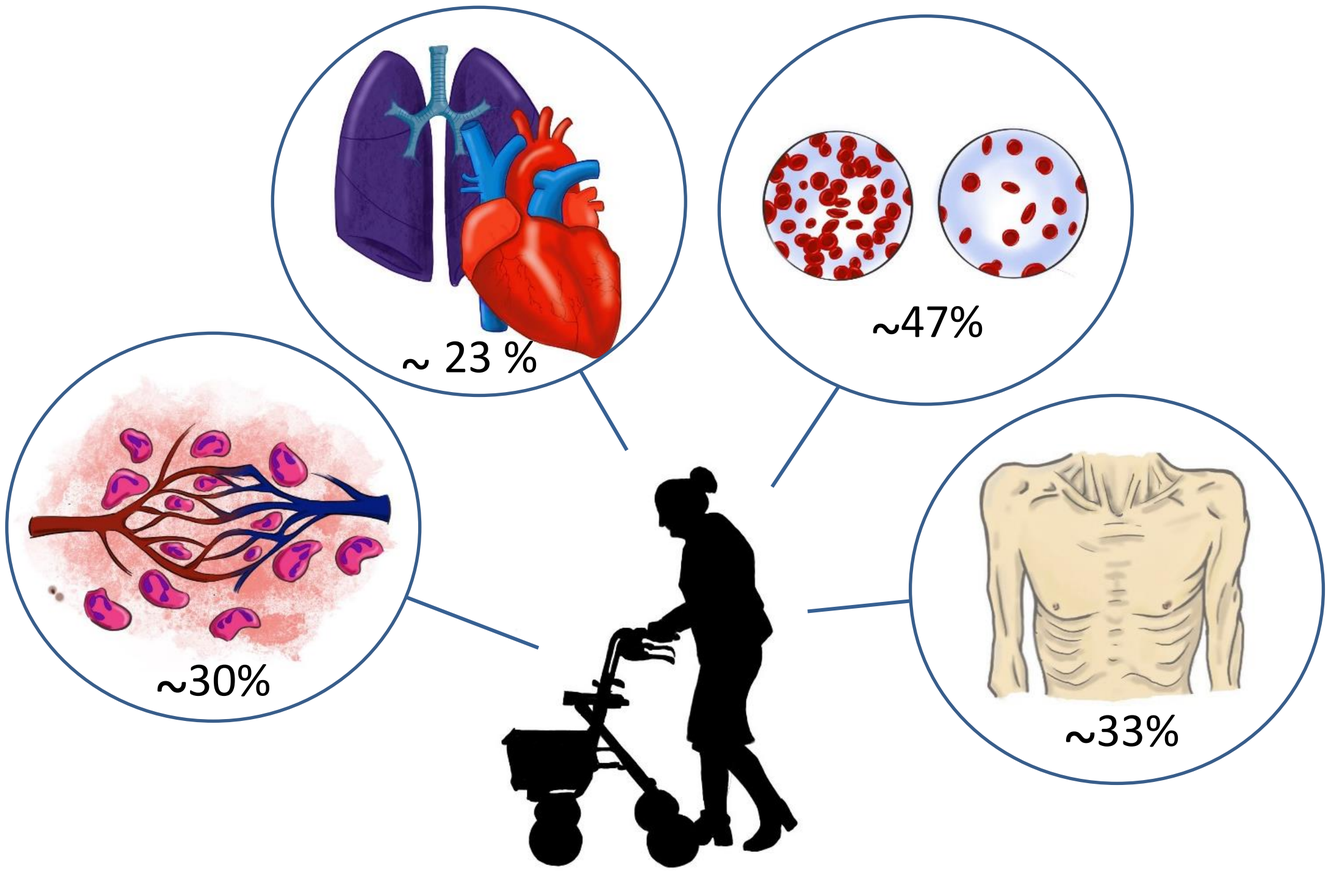

PRÆHABILITERING – MULTIMODALT

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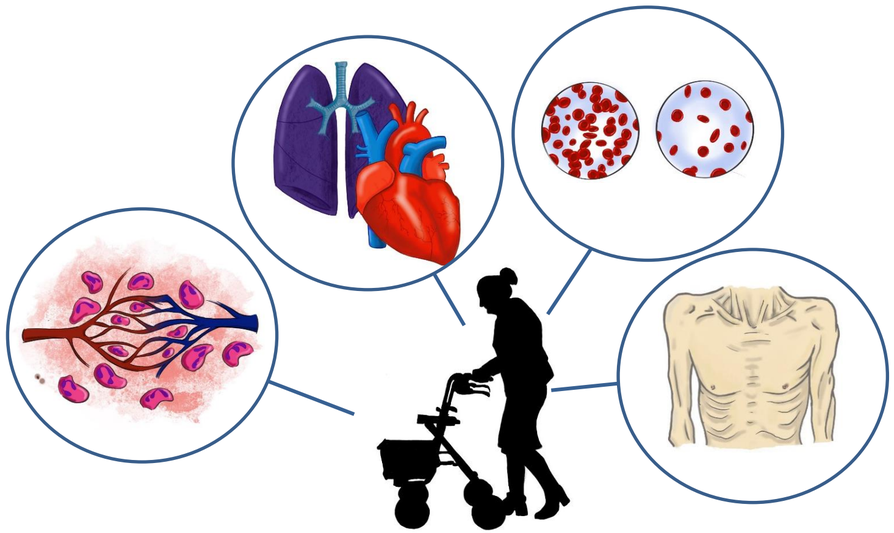

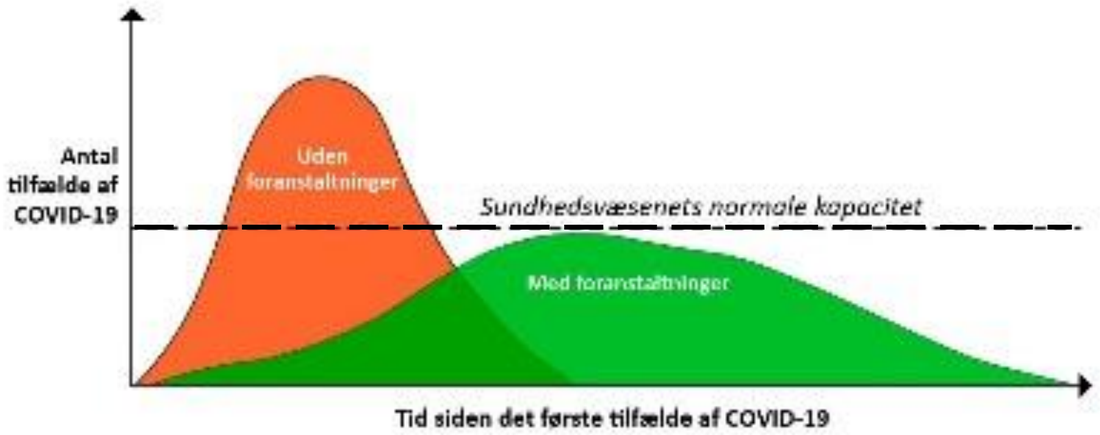

The effect of modifiable high-risk indicator screening and prehabilitation prior to colorectal cancer surgery: A controlled before and after study – Bojesen et al. BJS open 2022

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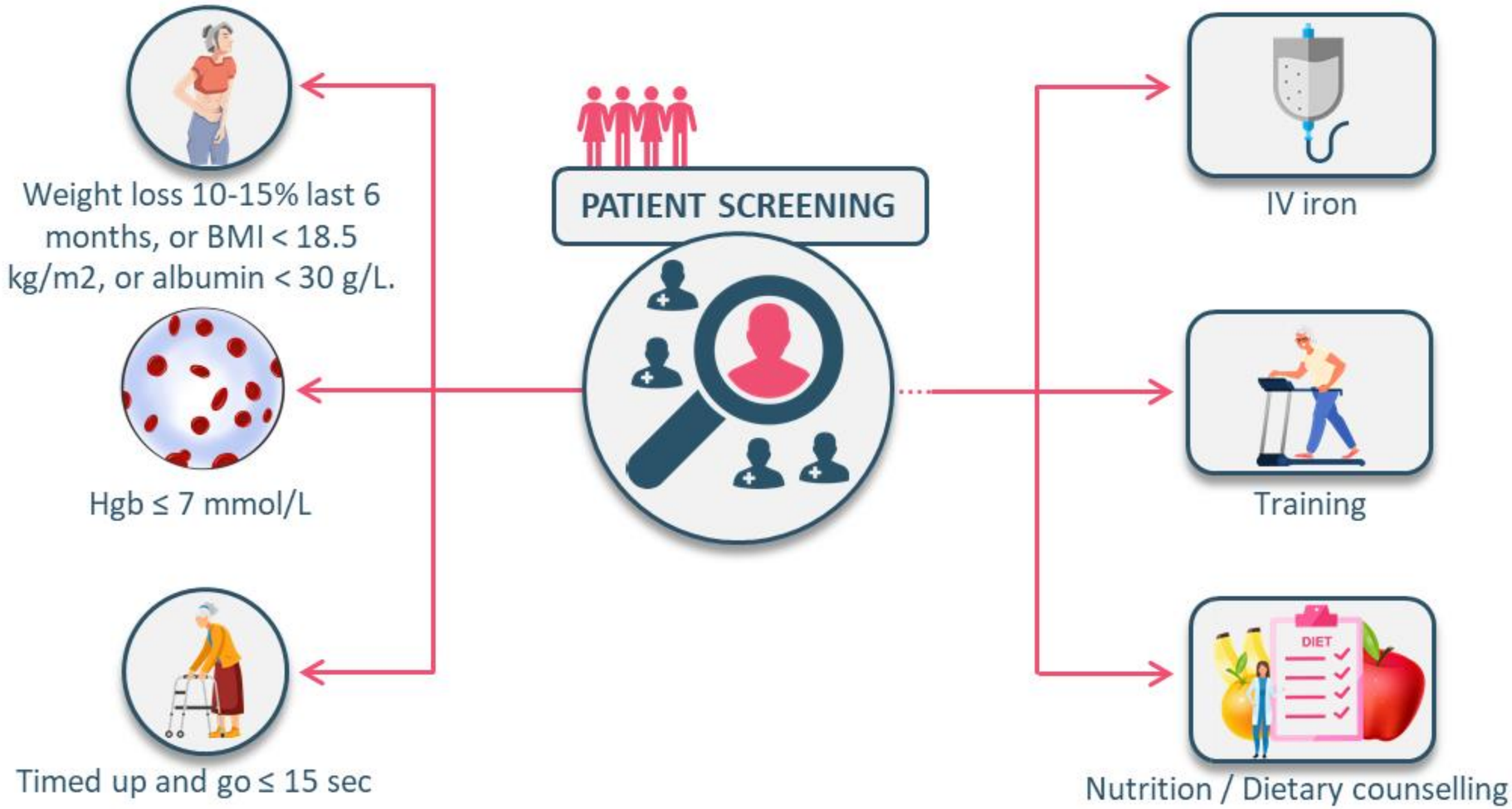

The effect of modifiable high-risk indicator screening and prehabilitation prior to colorectal cancer surgery: A controlled before and after study – Bojesen et al. BJS open 2022

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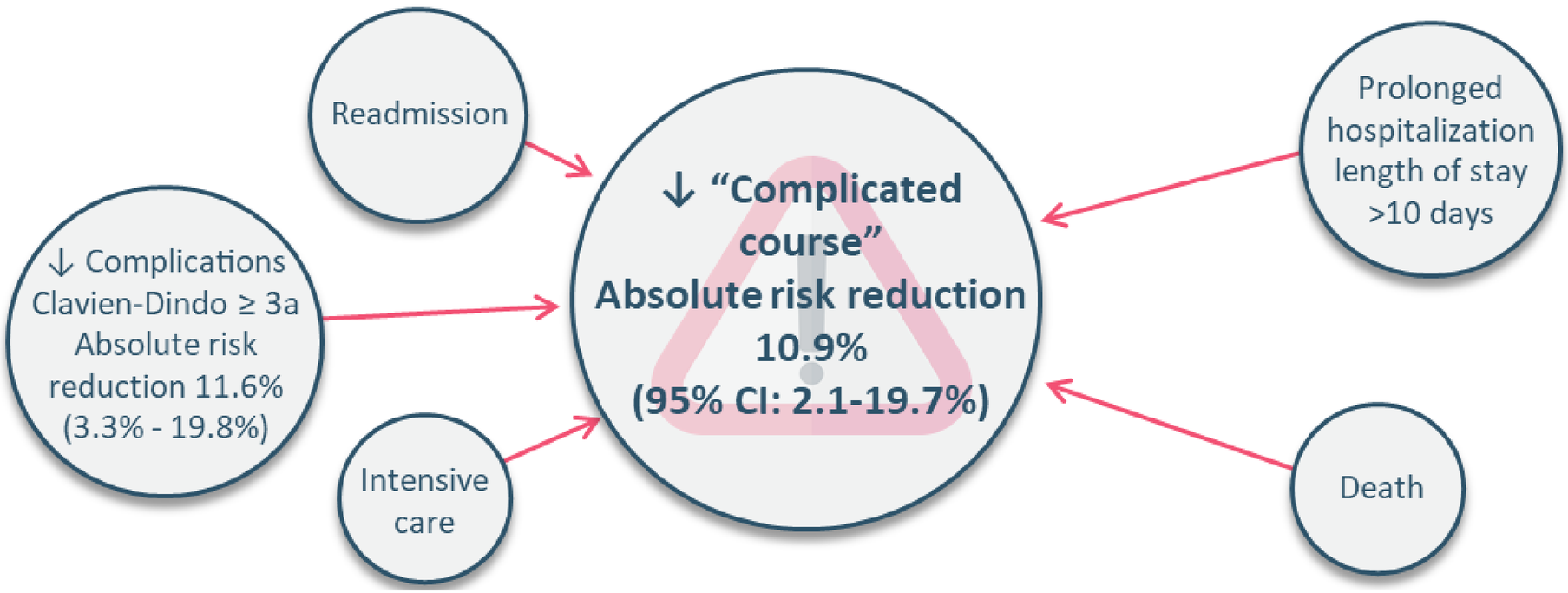


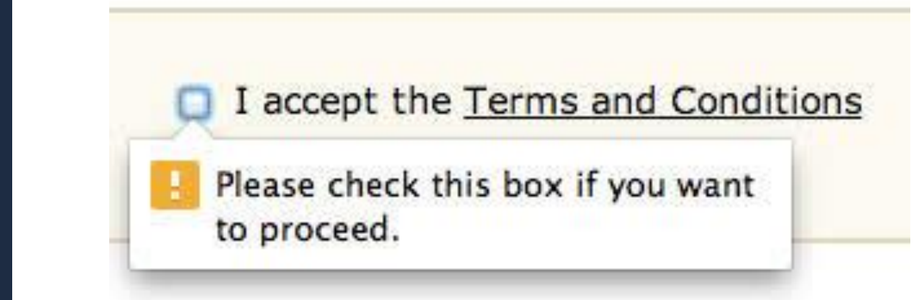
Opsummering – Take home messages!

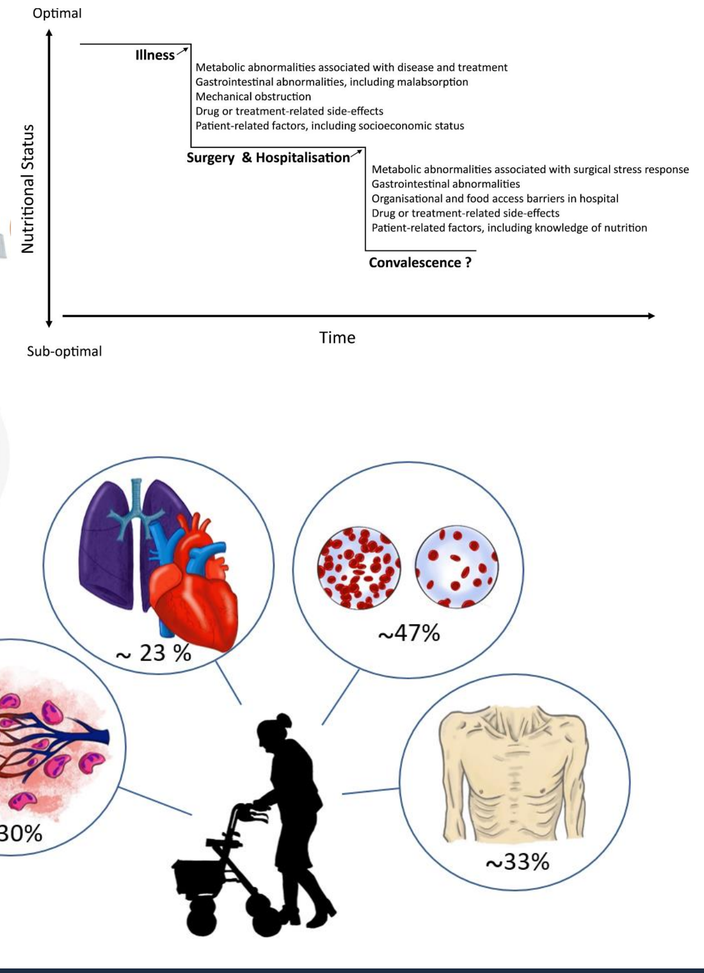
I Screening for fejlernæring på alle!

II Så tidlig en intervention så muligt!

III Diætist + ONS
Fokus på protein

IV Ernæring skal være en del af en multimodal indsats





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